Questions for Miami Fort

Arsenic

1. Confirm 200.8 self-monitoring data used a collision cell or dynamic reaction cell.
2. Why is the RL for the 200.8 self-monitoring data at 20 ug/L or higher?
    a. Why not analyze samples to achieve lower RLs, given that clearly was possible (see EPA and industry results for dates of EPA sampling and 308 sampling)?
    b. Why was the plant/lab able to measure at low enough levels to report a detect at 4.34 ug/L on 6/28/11, but weeks preceding and following are all ND at 20 ug/L? (Also note that the RL is listed as 20 ug/L on that date.)
3. Why are there multiple results for each day on 7/13/10, 7/14/10, 7/15/10, 7/16/10, 9/28/10, 11/2/10, 12/7/10, & 1/14/11? Would it be appropriate to average the results for each day to obtain a single daily value?
4. Please explain the observations reported for 5/8/13 (5, 5, 46, and 500 ug/L). Clarify which results are D or ND (inconsistency between comments and the data table).
5. Please provide the lab reports for the arsenic data in the "USEPA Analytical Data Table MFS #-26_14.xlsx" file for the following dates (these reports were not included in the disk): 7/13/2009, 8/3/2009, 9/1/2009, 10/5/2009, 11/2/2009, 12/1/2009, 1/5/2010, 2/2/2010, 3/2/2010, 4/6/2010, 5/4/2010, 6/1/2010, 7/6/2010, 7/12/2010, 7/13/2010, 7/14/2010, 7/15/2010, 7/16/2010, 8/3/2010, 9/7/2010, 9/28/2010, 10/5/2010, 11/2/2010, 12/7/2010, 1/14/2011, 6/28/2011, 6/28/2011, 3/6/2012, 7/31/2012, 8/1/2012, 8/8/2012, 8/9/2012, and 5/8/2013.

Mercury

6. Confirm that data submitted by UWAG are repeats of the data reported by Duke (and not lab analyses of split samples)
7. Apparent data entry errors where the spreadsheet is offset by one day from the data previously submitted in comments by Duke and UWAG. Which date is correct? (See 8/3/09, 8/4/09…10/1/09, 10/2/09…11/2/09, 11/3/09… 6/1/10, 6/2/10…7/1/10, 7/2/10…8/2/10, 8/3/10…9/1/10, 9/2/10…10/4/10, 10/5/10…1/4/11, 1/5/11…3/1/11, 3/2/11…4/4/11, 4/5/11…8/30/11, 9/2/11)
8. Why does the spreadsheet omit the following observations that were included in the Duke comments:
    a. 7/14/10 (120 ng/L)
    b. 9/28/10 (242 ng/L)
    c. 11/2/10 (251 ng/L). Note that the spreadsheet shows 343 ng/L on this date. Is the 343 a data entry error? If not, please provide the lab report for this result.
9. Why does the spreadsheet show 43 ng/L on 5/24/11, compared to Duke & UWAG comments showing 20 ng/L? Is this actually the observation in Duke comments for 6/28/11? Note that there is no lab report for 6/28/2011, so is the 43 ng/L a data entry error?
10. Please confirm that for the FGD WWT effluent (Outfall 608), Duke Energy provided the average of two total mercury samples in the spreadsheet (i.e., average of native sample and duplicate). Based on a review of the lab reports, EPA found the following discrepancies:
    a. The average value for 10/2/2009 should be 83.15 ng/L (instead of 84.95 ng/L).

b. The values provided for 1/3/2013, 7/2/2013, 10/2/2013, and 6/2/2011 for Outfall 608 only account for the native sample and do not account for averaging the duplicate result. EPA believes the following values should be used:
    i. 1/3/2013: 48 ng/L (instead of 50 ng/L);
    ii. 7/2/2013: 245 ng/L (instead of 250 ng/L); and
    iii. 10/2/2013: 265 ng/L (instead of 260 ng/L).
    iv. 6/2/2011: 80.5 ng/L (instead of 79 ng/L). Additionally, in the analytical data table, the RL is reported as 0.5 ng/L and the dilution factor is reported as 1. However, in the lab report, the native and duplicate sample for Outfall 608 both have a RL of 10 ng/L and a dilution factor of 20. Which RL and dilution factor values are correct?

11. See the observations on 7/2/13 (250 and 33). The lab report shows that the 33 ng/L result is for dissolved mercury (spreadsheet says total Hg); the total mercury value should be 245 ng/L (average of 240 and 250). (Also see 10.b.ii above)
12. The sample value for 4/2/2013 of 0.5 ng/L for the FGD WWT effluent (Outfall 608) is flagged as a non-detect value in the lab report but a detection in the data table. Please confirm whether this should be treated as a detected or non-detect value.
13. The value from 11/3/2009 for Outfall 608 is a rounded value. EPA believes the value should be 262.5 ng/L (instead of 263 ng/L).
14. The 57.95 ng/L total mercury value reported for effluent 9/1/2009 should be 9/21/2009. The spreadsheet is missing the actual 9/1/2009 result of 62.7 ng/L.
15. The dilution factor and reporting limit (RL) for the Outfall 608 mercury data from 4/5/2011, 8/4/2011, and 9/2/2011 are different for the native and duplicate sample. For the 4/5/2011 and 8/4/2011 sample, Duke Energy provided the average analytical result but reported the RL and dilution factor for the native sample; but for the 9/2/2011 sample, Duke Energy provided the average analytical result but reported the RL and dilution factor for the duplicate sample. Please explain the reasoning for which RL and dilution factor were provided in the analytical data table.
16. Please explain why FGD WWT influent (Outfall 601) results for samples analyzed with the SWA846 7470A method were not included in the analytical data table.
17. What values should be used to represent the FGD WWT Influent (Outfall 601) on 8/3/2011?
    a. For Unit 7, the analytical data table includes 320,000 ng/L and includes a note from Joe Potts that value "was 300,000 TA reports show 320,000." However, from EPA's review of the lab report, there was one result using EPA Method 1631 at 300,000 ng/L and one result using Method 7470A at 360 ug/L.
    b. For Unit 8, the analytical data table includes 290,000 ng/L. EPA notes there are four results for Unit 8 total mercury:
        i. Native sample using 1631E: 290,000 ng/L
        ii. Duplicate sample using 1631E: 320,000 ng/L
        iii. Native sample using 7470A: 410 ug/L
        iv. Duplicate sample using 7470A: 420 ug/L

        On the Table 1 summary of the lab report (see page 4 of PDF), there is a footnote designation for the 1631E Unit 8 samples stating that "after collection of samples, URS was informed that both Unit 7 and 8 were being processed through Station 601." Which mercury results are most appropriate for use in representing the Unit 8 sample results?
18. The dilution factor for the FGD WWT Influent (Outfall 601) on 9/3/2013 for Units 7 and 8 are listed as 100,000 in the analytical data table, but the lab report shows the dilution factor as 100. Based on the reporting limit for the samples (20,000 ng/L) and the laboratory reporting limit for

a dilution factor of 1 (0.5 ng/L), it seems that dilution factor should be 40,000. Which dilution factor is correct?

19. We observed three data points at substantially higher concentrations relative to the other effluent values. What was happening with plant processes, coal sources, treatment system operation? What actions were taken in response to these observed concentrations?
    a. 9/1/10 (640.5)
    b. 7/6/11 (675)
    c. 10/4/11 (770)
20. Please provide the lab reports for the mercury data in the "USEPA Analytical Data Table MFS #-26_14.xlsx" file for the following dates (these reports were not included in the disk): 9/21/2009 (only summary page provided), 7/12/2010, 7/13/2010, 7/14/2010, 7/15/2010, 7/16/2010, 12/7/2010, 1/5/2011, 1/14/2011, 2/1/2011, 9/26/2011, 3/1/2012, 7/31/2012, 8/1/2012, 8/8/2012, 8/9/2012, 2/4/2013, 2/5/2013, 3/4/2013, 3/5/2013, 5/1/2013, 5/2/2013, 5/8/2013, 6/3/2013, 6/4/2013, and 8/2/2013.